

CLAIMS

1. A machine for inspecting the wall of a bottle comprising
a conveyor for supporting a bottle at an inspection
5 station,

the inspection station including

a CCD camera on one side of the conveyor having a
camera image,

a light source, having an illumination area, on the
10 other side of the conveyor, for imaging the bottle on said CCD
camera image means,

means for defining a spatially cyclically continuously
varying intensity between a minimum brightness level that will
permit the identification of a light blocking defect
15 therebehind and light on said light source illumination area at
a rate of change which is less than that required to be
detected as a defect,

computer means for analyzing said camera image by
comparing neighboring pixels (one or more away) alone or in
20 combination to determine the rate of change in intensity to
identify defects where the rate of change exceeds a defined
value.

2. A machine for inspecting the wall of a bottle according to
25 claim 1, wherein said light source comprises a plurality of
L.E.D. rows.

3. A machine for inspecting the wall of a bottle according to
claim 2, wherein said plurality of L.E.D. rows define a
30 plurality of row groups each including a light row at one side,
a row having a minimum brightness, at least one row
intermediate said white and minimum brightness rows having an
intensity between minimum brightness and white, and at least
one row on the side of said minimum brightness row remote from
35 said white row having an intensity between minimum brightness
and white.

4. A machine for inspecting the profile and wall of a bottle according to claim 3, wherein there are a plurality of vertical L.E.D. rows intermediate the minimum brightness and white rows and the intensity of said plurality of intermediate rows uniformly reduces from the white row to the minimum brightness row.

5. A machine for inspecting the profile and wall of a bottle according to claim 4, wherein there are a plurality of vertical L.E.D. rows on the side of said minimum brightness row remote from said white row and the intensity of said plurality of said rows on the side of said minimum brightness row remote from said white row uniformly increase in intensity proceeding away from the minimum brightness row.

6. A machine for inspecting the profile and wall of a bottle according to claim 5, wherein said minimum brightness row has a brightness level of about 20% and wherein each of said vertical L.E.D. row groups has three vertical rows intermediate said minimum brightness and white rows, with the intensity of the row adjacent the minimum brightness row having an intensity of about 40% of the white row and the intensity of the row adjacent the white row having an intensity of about 80% of the white row and the intensity of the intermediate of the three vertical rows intermediate the minimum brightness row and white rows having an intensity of about 60% of the white row.

7. A machine for inspecting the profile and wall of a bottle according to claim 6, wherein each of said vertical L.E.D. row groups has three vertical rows on the side of said minimum brightness row remote from said white row, with the intensity of the row adjacent the minimum brightness row having an intensity of about 40% of the white row and the intensity of

